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The Effects of Fluency Instruction on the Oral Reading Fluency and Comprehension of First-Grade African American Males with Reading Risk

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This study evaluated the effects of a fluency building activity on the oral reading fluency (ORF) and comprehension of four first grade students identified as at risk for reading failure. The participants in this study were selected because they were members of a group at the highest risk for reading problems, specifically African American boys attending an urban school district. The results of this study demonstrated that the intervention was successful in increasing the ORF of all four participants but results were much more robust for two of the four students. Although ORF increased for all of the participants, gains in comprehension and on formal measures were less evident. The results and implications for classroom implementation as well as directions for future research are discussed.

Keywords: African American males, oral reading fluency, reading failure, at risk

Developing strong reading skills is very important for all students and leads to academic and later life success. Reading undergirds all subject areas and students are increasingly dependent on it to gain information as they advance through school and into their life's work. Although reading is an essential skill for success, the most recent data provided by the National Assessment of Educational Progress (NAEP, 2011) indicated that 33% of 4th- and 24% of 8th-grade public school students performed below basic levels. The 2011 report also

provides data on specific group scores to examine gender differences and the differences between racial groups. The gender data revealed that female students consistently outperformed their male counterparts in reading scores over that past two decades. In the 1992 report the average score for female students in fourth grade was 221 and for male students it was 213. By 2011, this achievement gap between male and female students was only reduced by one point. These differences in reading

between the genders were fairly similar for eight grade students as well.

An even greater discrepancy in reading scores is found when comparing racial groups. Although the report demonstrates that the gap between white and black fourth graders remained relatively unchanged over the last 20 years (i.e. 32 point difference in 1992 and a 26 point difference in 2011), this gap is substantially wider than the gender gap. When examining the difference between racial groups, fourth grade white students outperformed all other groups and fourth grade black students performed the poorest, averaging a score of 205 points, which is considered below basic reading levels. Black students also had the lowest proficiency level scores: 44% of fourth grade white students were at or above proficient levels compared to 17% of black fourth graders. From these data, it is evident that achievement gaps persist between white and black students. Considering gender and racial discrepancies, it is safe to conclude that African American males have the lowest reading scores and therefore the greatest risk for reading failure.

The reading difficulties of African American males are further compounded when considering the environment where they go to school. A report released by the National Center for Educational Statistics (NCES) in 2007 indicated that 68% of urban 4th graders were reading at or below basic levels and African American students disproportionately attend urban schools. For instance, approximately 17% of the school population in the United States is African American but they make up a much larger percentage of students in large U.S. cities. For example, African American students made up 66% of the 4th graders in the Cleveland public schools and 86% of the 4th graders in the Washington D.C. public school. Reading scores in these districts showed that over 90% and 86% respectively

were reading either at or below basic levels (NCES, 2007). All of these facts combined strongly suggest that African American boys, especially from urban school districts are prime targets for early identification and intervention of reading difficulties.

Early Reading Intervention

The disturbing evidence of early and persistent reading failure has led researchers to aggressively pursue effective reading interventions for young students (Hurry & Sylva, 2007; Whiteley, Smith, & Connors, 2007; Simmons, Kame'enui, Harn, Coyne, Stoolmiller, Santoro, Smith, Beck, & Kuafman, 2007). These studies provide evidence that through effective and efficient instruction young students can be taught basic skills and become strong readers. Researchers speculate that effective early interventions can decrease the number of students exhibiting reading difficulties in later elementary and secondary grades. When discussing reading difficulties, it is helpful to determine what makes a reader efficient. According to the National Reading Panel, an efficient reader should exhibit proficiency in several different sub-skills. An outline of these skills and effective methods of instruction are provided in a report entitled, "Put Reading First: The Research Building Blocks of Reading Instruction" (Center for the Improvement of Early Reading Achievement, 2003). These skills include phonemic awareness, phonics, fluency, vocabulary, and text comprehension. Although these skills can be taught individually efficient readers should exhibit all five reading competencies.

Oral reading fluency. In recent years, increasingly more attention has been given to fluency, particularly oral reading fluency (ORF) and reading comprehension (Reis, McCoach, Coyne, Schreiber, Eckert, & Gubbins, 2007; Martens, Eckert, Begeny, et al. 2007). In fact, some research indicated

that oral reading fluency scores may be used as an overall predictor of reading achievement (Fuchs, Fuchs, Hosp & Jenkins, 2001). For example, a recent study conducted by Schilling, Carlisle, and Scott (2007) used fluency scores from the DIBELS (Good & Kaminski, 2002) oral reading fluency sub-test to predict the reading scores on an end of the year state mandated reading achievement test. First, second, and third graders received the fluency sub-test at three different times during the school year. Students who were considered at high risk for reading problems as indicated by the DIBELS also scored below grade average for reading on the end of the year assessment.

Related research showed a positive correlation between ORF and comprehension (Fuchs et al., 2001; Jenkins, Fuchs, & Van den Broek, 2003), thus prompting interest in ways to increase ORF. Research conducted by the National Reading Panel (NRP, 2000) found that over 40% of fourth-grade students did not read with enough speed and accuracy to be considered fluent. This led the NRP to recommend that schools focus on directly teaching students reading fluency skills. The research in this area revealed that ORF may not automatically emerge from teaching other skill areas such as phonemic awareness and the alphabetic principle (Reading & Van Deuren, 2007). Kourea (2007) found that intensive instruction in phonemic/phonological awareness increased the scores of first-grade students on letter/sound and phoneme segmentation fluency but did not increase oral reading fluency.

Oral Reading Fluency Interventions

With an emphasis on the need to increase the ORF of struggling readers and the research to support the use of procedures such as repeated readings (Samuels, 1979;

Meyer & Felton, 1999; Valleley, 2003 & Therrien, 2004), some researchers investigated ways to improve ORF teaching strategies. Repeated reading refers to procedures in which students practice the same passage until they are able to read it with the speed and accuracy to meet a certain criterion (e.g., 40 correct words per minute). Adorin, McCall, and Klubnik (2007) investigated two different types of repeated readings. In one treatment phase participants were exposed to a pre-selected passage and introduced to a repeated reading procedure. During the second phase participants practiced multiple examples of the reading passage. The results of this study showed that both intervention phases increased the oral reading fluency rate of the participants but the repeated reading phase produced overall higher rates of ORF and more generality as noted by higher ORF rates on unpracticed passage.

In another study the use of phrase drill error correction has been investigated as a possible procedure to increase ORF (Begeny, Daly III & Valleley, 2006). This procedure involves having a student read a selected passage while the instructor records the words that they read incorrectly. Following the completion of the reading passage, the instructor has the student read a phrase or series of phrases that contain the incorrect words. The student was then instructed to re-read the passage to determine if he/she could accurately read the missed words. The results of this study indicated that three different instructional approaches increased the ORF of the participant over baseline, but the use of repeated reading and phrase drill error correction were the most effective in increasing oral reading fluency.

Despite the promising findings of the noted ORF studies, further investigations are still warranted. Although there have been some ORF studies conducted with early

primary students (Fuchs et al. 2001; Hapstak & Tracey, 2007), much of the research has focused on older students. Typically, fluency interventions are conducted with intermediate grade students (i.e. 3rd through 6th grade). Given the fact that struggling students often fail to acquire adequate reading skills at a young age and once behind their peers it is difficult to catch up, more research should be conducted on ORF strategies within the early primary grades (i.e., kindergarten and 1st grade). There is also a need to focus reading interventions on populations most at risk for reading failure. As noted earlier, the population that is at the highest risk for reading failure is African American boys attending school in urban districts. Finally, the procedures that have been used to increase ORF with students have only focused on one of several techniques (i.e. repeated readings, phrase-drill correction, etc.) there has not been much research conducted on the use of a combination of procedures. It may be beneficial to conduct research on the use of fluency building activities that combines several components for increasing ORF for at risk populations.

The purpose of this study was to investigate the effects of small group fluency instruction for first grade, African American male students. This instruction included the following five components: sight word recognition, modeled reading, guided practice with corrective feedback, one minute timed reading checkout, and one-minute timed cold read. In addition, a comprehension measure was included to determine if comprehension increases along with ORF.

Methods

Participants and Settings

A total of four African American males participated in this study and they met the following selection criteria. First, they

all attended a public elementary school in a large Midwestern city and were in first grade classrooms. Second, all of the students were identified as “at-risk” of reading failure because they tested below benchmark levels for oral reading fluency on the DIBELS (Good & Kaminski, 2002). In spite of the participants being identified as “at-risk” for reading failure they were not categorized with a disability or receiving special education services.

This study took place in an urban public elementary school that was located in a low socioeconomic area of the city. The majority of students were African American (61.02%), with 32.33% European American, and the rest of other racial/ethnic backgrounds. The school also served 17.2% (57) English Language Learners and nearly all students (98.2%) received free or reduced lunch. Special education services were provided to 16% (53) students.

All teaching and testing sessions were conducted in an observation/intervention room within the school. Baseline and treatment sessions took place in a tutoring room that was outside the general education classroom. The specific teaching area consisted of a table, five chairs, and the teaching materials used for this study.

Materials

The materials used in this study included assessment materials, reading passages, a timer, items used as rewards and teaching procedures materials. The assessment instruments included the DIBELS winter and spring benchmark assessment sub-tests: phoneme segmentation fluency (PSF), nonsense word fluency (NWF), and oral reading fluency (ORF).

Standard reading passages. Standard reading materials consisted of connected text stories of 50 to 60 words. These were first-grade stories, selected by the

experimenter from the AimsWeb (2004) 1st-grade progress monitoring reading passages. These passages were designed to monitor the ORF of students at their grade level. The Flesch-Kincaid grade level readability scale was employed to ensure that each passage was on a first-grade reading level. These passages served as the stories that were used for the teaching procedures as well as the cold passage timed readings.

AimsWeb. (Edformation, 2004). Reading passages from the first grade AimsWeb oral reading fluency assessment were used for baseline and treatment probes throughout the study. As noted above, these passages were also used for the teaching procedures as part of the fluency instruction. There was no overlap in reading passages so passages using during the instruction were different from baseline and treatment probes.

Timer. A digital kitchen timer was used to time all of the 1-minute timed readings. This timer was set for one minute at the beginning of the timed reading and the participants were instructed to read a pre-selected passage for one minute.

Star-Chart and Rewards. Each participant had a star chart with 10 spaces on it. This chart was used to provide tokens to the participants for correct responding and on-task behaviors. A variety of tangible rewards (e.g. gummy worms, small edibles) were provided to the participants for receiving a pre-determined number of stars on their chart. These rewards were delivered using a variable ratio schedule of reinforcement.

Dependent Variable

The first dependent variable for this study was the number of correct words read during a one-minute cold reading. The cold reading consisted of a connected text passage selected from the AimsWeb standard stories and each was completely novel to the participants. Data were collected on the number of correct and

incorrect words read during the one-minute timed reading. In order for a word to be considered correct the participants needed to pronounce the word accurately within 3 seconds of the previous word being read. A word was considered incorrect if the participant mispronounced the word or did not read it within 3 seconds of the previous word being read.

The second dependent variable was the percentage of correct maze sequences completed following the baseline or treatment probe (i.e. completing the cold reading). During this procedure participants received the same passage used for the cold reading but it had five key sentences in which a specific word was replaced with three choices. Participants were instructed to read the passage (up to the point they completed during the cold reading probe) and circle the one word that “made the most sense” in the sentence. Accurately circled words were counted as correct and inaccurately or no words circled were counted as incorrect.

Procedures

Experimental Design and Conditions

A multiple baseline across participants design was used for this study. There were three tiers in which the baseline and treatment sessions were staggered. The first tier contained one participant, the second tier contained two participants, and the last tier contained one participant.

Baseline. Baseline consisted of one minute timed readings on a cold passage. Each participant was given a reading passage and instructed to read as many words as he could within a one-minute time period. The experimenter stated, “Here is a story for today, I want you to read as many words as you can and as fast as you can. If you do not know a word, I will tell it to you so you can keep reading.” The timer was set for one minute and was started once the participant

began to read the first word of the passage or once 3 seconds had elapsed. If the participant did not read the first word or any subsequent words within 3 seconds, the experimenter provided the correct pronunciation of the word and instructed him to go to the next word and that was scored as incorrect. At the end of the one-minute timing, the experimenter counted the total number of correct words and recorded this number on the data collection sheet. Following the completion of the one-minute timing, the participant was given the maze procedure passage. The experimenter told the participant, "Here is the story you just read, I want you to read it again and circle the words that make the most sense in each sentence."

Intervention: Teaching Oral Reading Fluency

Following the collection of the baseline data the fluency instruction sequence was introduced to each participant. This sequence consisted of the following components: 1) sight words, 2) modeling, 3) practice reading with corrective feedback, and 4) one-minute timed reading. Following the completion of the sequence a treatment probe was given to the participants. Below is a complete description of each step in the sequence.

Sight words. Prior to reading the practice passage, the experimenter introduced to each participant five new sight words for that passage. These words were selected from the current practice passage and consisted of words that were not decodable, (i.e., words that cannot be decoding phonetically such as the word "the"). At the beginning of the activity the experimenter stated, "I am going to show you some words, these are words that you will not be able to sound out", and each sight word was presented on an index card, in random order. The experimenter rotated through all of the sight words twice and then presented each one in random order

and stated, "Tell me what this word is." If the participant correctly read the sight word, he was given a star on the chart, verbal praise, and the next word was presented. If the participant read a sight word incorrectly, the experimenter provided corrective feedback by stating "no, that is not the word, the word is _____", and placed the word back into the stack of cards. This procedure continued until the participant was able to read all of the sight words correctly without prompting.

Modeling. Following the completion of the sight word activity, the experimenter introduced the pre-selected reading passage associated with the sight words. Participants were instructed to place their finger on the first word of the story and "follow along". The experimenter stated, "I am going to read this story to you, I want you to put your finger on each word and listen to the story as I read it." Then the experimenter began to read the story at a rate that the participant was able to follow. Each participant received a star on his chart if he followed the story for the duration of the reading.

Practice reading with corrective feedback. Following the modeling step the participants engaged in a practice reading activity. The experimenter instructed each participant to engage in reading the selected story by stating, "Now it is your turn to read the story, I want you to put your finger on the first word and read as many of the words as you can." During this step participants had an opportunity to read the entire story. If a word was mispronounced the experimenter immediately provided the correct pronunciation and the reader was prompted to repeat the word. Additionally, if a participant failed to read a word within 3 seconds of the previous word, the experimenter provided the correct pronunciation of the word. Corrective feedback consisted of the experimenter stating the following, "that is not quite right,

that word is _____, what is the word? Good, now say it again, please read that sentence again.” If a participant made more than two mistakes during the practice reading he was told that he would read the story again next time. There was neither a limit on the duration of time participants were allotted to read the passage nor the number of sessions allotted to reach criterion (i.e., reading the entire story with 2 or fewer errors). Students were not timed when reading these passages, but they were prompted to read the passages as quickly and as smoothly as possible.

One-minute timed readings. Once the participant was able to read the entire story with fewer than two mistakes, a one-minute timed reading was conducted. The experimenter instructed the participant to begin reading the selected passage. A timer was started as soon as the participant read the first word or if three seconds elapsed. The experimenter provided the correct pronunciation for all the words that were mispronounced or not read within three seconds and these words were scored as incorrect. After one minute elapsed, the experimenter counted the number of correct words read during the time period. The participant remained on the selected story until he reached the criterion for treatment probe. The original criterion for this step was 40 correct words per minute because this is the benchmark for ORF at the end of first grade; however, due to the low baseline levels for all of the participants, the criterion was adjusted to 20 correct words per minute.

Treatment probes. Once a participant reached criterion for each story they were given a treatment probe. These probes consisted of a one-minute cold reading of a novel, unpracticed reading passage. Participants were given the passage and instructed to begin reading it. The timer was started upon the first word read or after three seconds had elapsed. If the participant did

not correctly pronounce a word or if three seconds elapsed without the participant reading the word, the experimenter provided the correct pronunciation and instructed him to go to the next word. The word was scored as incorrect. After one minute, the experimenter instructed the participant to stop reading and counted the number of correct words that were read. Following the one-minute ORF treatment probe participants were given a comprehension probe. These probes were the same as the maze procedures described above. The experimenter recorded the participant's responses on a data sheet.

Interobserver Agreement and Procedural Integrity

A second observer independently recorded data during 35% of baseline and treatment probes. These probes were recorded using an audio recorder and these recordings along with a copy of the passage were provided to the second observer. The second observer recorded correct and incorrect words that were read by the participant and well as answers provided on the comprehension probes.

Interobserver agreement was calculated using the exact agreement method. In this study the total number of correct words and the total number of incorrect words per session were calculated by both observers. An agreement was scored if the total number of both correct and incorrect words were recorded the same across both observers. Agreement was calculated using the following formula: $\text{Agreement} = \frac{\text{Frequency}}{(\text{Agreement Frequency} + \text{Disagreement Frequency})} \times 100 = \text{___}\%$. Interobserver agreement was calculated separately for each story passage and then averaged for all of the passages across all of the participants. Interobserver agreement for this study was 98% (range 96% - 100%).

A second independent observer collected procedural integrity data in 33% of baseline and treatment sessions. The second observer was present during these baseline and treatment sessions and used a checklist to ensure that the experimenter accurately implemented the treatment procedures. Procedural integrity was determined by calculating the percentage of treatment steps that were correctly implemented for each session. All the procedural integrity sessions were averaged together to obtain the total integrity score for treatment sessions. Procedural integrity for this study was 100% for all sessions.

Social Validity

Social validity measures were used to assess the participants' and teachers' satisfaction with the treatment procedures. An independent individual administered a questionnaire to the participants and questionnaires were given to the teachers following the completion of the study. This questionnaire contained five questions that were generated by the experimenter and were answered using a modified Likert type scale. For example, students were asked if they liked working on reading a little, somewhat, or a lot. The results of the social validity measures indicated that all of the participants enjoyed working on reading, thought they were better readers at the end of the intervention, would like to continue learning to read, and enjoyed earning candy for reading. When asked if reading was still hard for them 3 out of 4 thought it was.

One of the two teachers was also given a social validity measure in the form of a Likert type questionnaire (the other teacher was out on maternity leave). This questionnaire contained questions related to the students' reading abilities, the success of the intervention, and the willingness to allow students to participate in similar interventions in the future. The results of

this measure indicated that she thought the students' overall improvement in reading was minimal and they only became slightly more fluent; however, she thought that reading intervention programs were important for struggling readers and that the students really enjoyed participating in this intervention. She also indicated her willingness to allow her students to participate in similar interventions in the future.

Results

Oral reading fluency. Figure 1 displays the ORF results for all of the participants. Each participant increased their ORF over baseline levels, as measured by correct words per minute (CWPM). For Tim a low level of responding occurred during baseline, with an average of 0.33 CWPM being read (range 0 to 1). Tim also read an average of 8.6 incorrect words per minute (IWPM) during baseline (range 8 to 9). Once treatment procedures were implemented, responding increased to an average of 4.6 CWPM (range 3 to 8). There was also an increase in the number of ICWP ($M = 8.6$, range 8 to 13) during treatment probe sessions. For Tim there was an increase of 4.27 CWPM and of 1.4 IWPM when comparing baseline to treatment session probes.

Alex had a low stable level of responding during baseline; with an average of 4.25 CWPM (range 3 to 5) he also read an average of 8.75 IWPM in baseline (range 7 to 12). Once the treatment procedures were implemented responding increased to an average of 11.8 CWPM (range 8 to 15). There was a slight decrease in the number of ICWP ($M = 8.6$, range 8 to 9) during treatment probe sessions. For Alex there was a mean increase of 7.4 CWPM and a decrease of 0.15 IWPM.

For Dan a low, stable level of responding occurred in baseline sessions, with an

average of 3.4 CWPM (range 2 to 4), he also read an average of 9.5 IWPM during baseline (range 7 to 12). Once treatment procedures were implemented responding increased to an average of 10.4 CWPM (range 6 to 13); however, there was also a slight increase in the number of ICWP ($M=10.4$, range 9 to 13) during treatment probe sessions. Dan averaged an increase of 6.6 CWPM and of 0.9 IWPM when comparing baseline sessions to treatment sessions probes.

Finally, Andy had variable levels of

responding in baseline, with an average of 9.7 CWPM being read (range 5 to 13). Andy also read an average of 7.9 IWPM in baseline sessions (range 5 to 13). Once the treatment procedures were implemented responding on CWPM increased to an average of 18 (range 11 to 22). There was no change in the number of ICWP ($M=7.8$, range 5 to 13) during treatment probe sessions. For Andy there was a mean increase of 8.3 CWPM and no change in IWPM when comparing baseline sessions to treatment sessions probes.

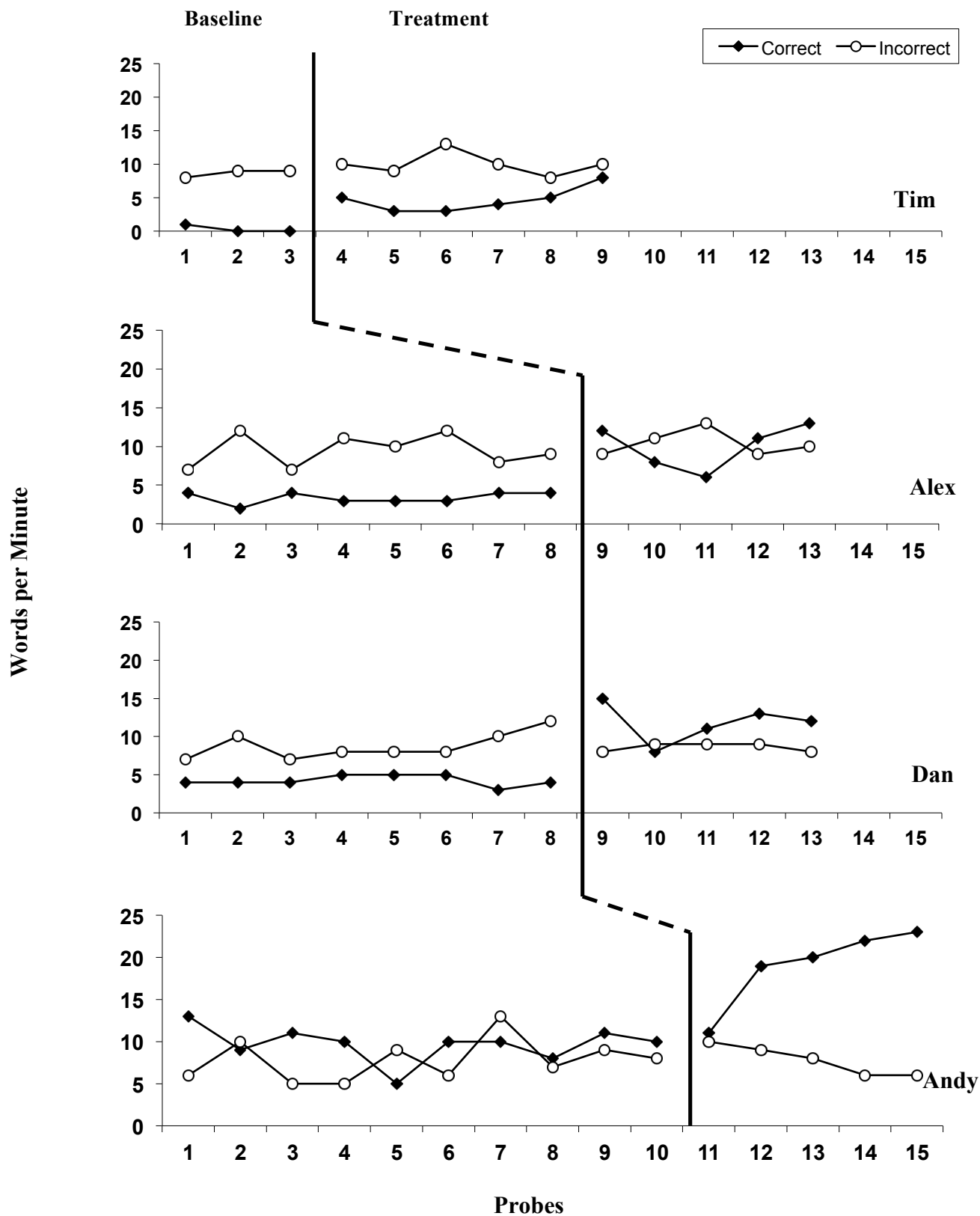


Figure 1. Number of correct and incorrect words per minute for Tim, Alex, Dan, and Andy

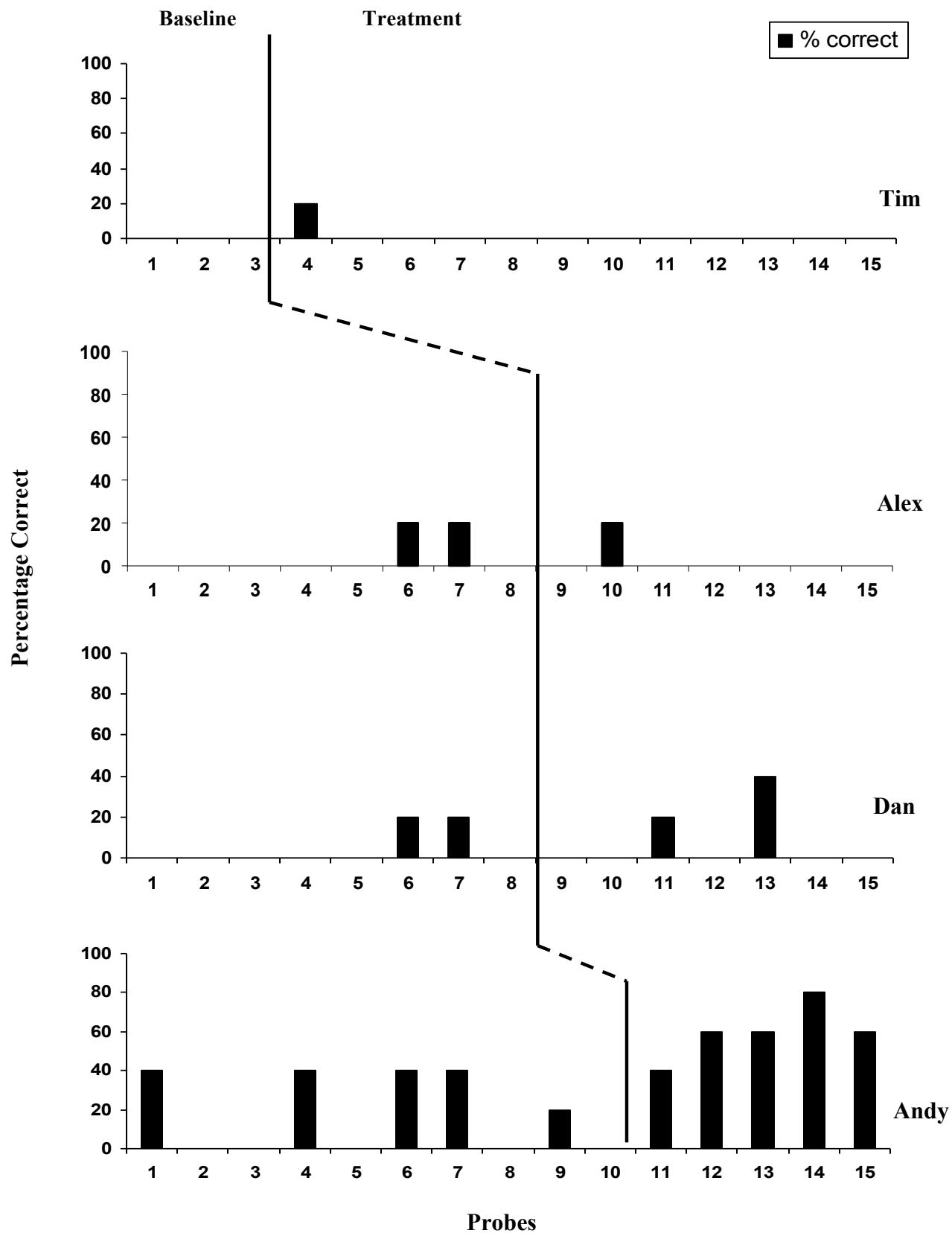


Figure 2. Percentage of correct comprehension responses for Tim, Alex, Dan, and Andy

The Effects of Fluency Instruction

Comprehension. Figure 2 depicts the results of the comprehension questions for all four participants. These results were mixed, with two of the four participants either not improving or only slightly improving the percentage of questions answered correctly. Tim did not respond correctly during any of the opportunities in baseline and only once or 3.3% for treatment probes. Alex responded correctly in 5% (2 out of 40) of opportunities during baseline and in only 4% (1 out of 25) of the opportunities during treatment probes.

For the other two participants, some increases in percentage of correct comprehension questions answered were demonstrated. Dan's correct responding increased slightly from baseline which was 5% (2 out of 40) of opportunities compared to treatment probes which was 12% (3 out of 25) of opportunities. Finally, Andy responded correctly in 18% of opportunities (9 out of 50) in baseline probes and 60% of opportunities (12 out of 20) in treatment probes.

DIBELS. The DIBELS benchmark scores from the mid-year and end of the year assessments for all four participants are presented in Table 1. The sub-tests included

phoneme segmentation fluency (PSF), nonsense word fluency (NWF), and oral reading fluency (ORF). These scores are accompanied by the risk level for each sub-test. The end of the year benchmark of ORF was higher for all four participants when compared to the beginning of the year scores. However, only two of the four participants (Dan and Andy) made gains of more than 5 words per minute and all of the participants were still considered to be at high risk for this category.

The results for the remaining subtests were mixed. Two participants either remained or advanced to the established range for PSF (Alex and Andy), one participant remained in the emerging range (Dan) and one participant moved from the emerging range to the deficit range (Tim) in the spring benchmark. On the NWF benchmark, two participants remained in the deficit range from the winter to the spring benchmark (Tim and Dan), one participant regressed from established to emerging (Alex), and the final participant increased his score to move from the emerging range to the established range (Andy).

Table 1: DIBELS Benchmark Scores

	DIBELS Benchmark Scores					
	PSF ¹		NWF ²		ORF ³	
	Winter ⁴	Spring ⁵	Winter	Spring	Winter	Spring
Tim	13/Emerg ⁶	2/Deficit ⁷	20/Deficit	20/Deficit	0/High risk	2/High risk
Alex	54/Estab ⁸	48/Estab	52/Estab	36/Emerg	5/High risk	6/High risk
Dan	23/Emerg	28/Emerg	10/Deficit	21/Deficit	2/High risk	9/High risk
Andy	29/Emerg	41/Estab	34/Emerg	50/Estab	11/Some	17/High risk

¹PSF = phoneme segmentation fluency (DIBELS benchmark subtest)

²NWF = nonsense word fluency (DIBELS benchmark subtest)

³ORF = oral reading fluency (DIBELS benchmark subtest)

⁴Winter = DIBELS winter benchmark

⁵Spring = DIBELS spring benchmark

⁶Emerg = indicates the emerging range on the DIBELS benchmark

⁷Deficit = indicates the deficit range on the DIBELS benchmark

⁸Estab = indicates the established range on the DIBELS benchmark

Discussion

The results of this study were mixed in that they demonstrated the fluency building activity was marginally successful in increasing the ORF for all four participants; however, the results were less robust for two of the participants. The use of a multiple baseline design helped demonstrate a functional relationship between the fluency instruction and the increase on ORF for all of the participants. The results of the reading comprehension measures were also mixed. Although three of the four participants demonstrated an increase in the percentage of comprehension questions answered correctly the gains for two of the three were minimal and there was no progress for one student.

This study supports the existing research literature on fluency instruction in several ways. First, the use of instructional activities to increase ORF has been demonstrated in previous research (Reis et

al., 2007; Martens et al., 2007). The current study is similar to Martens et al. in several aspects; both studies used an intervention package to improve oral reading fluency of the participants. The Martens study used phrase drill error correction in which students were instructed to repeat a phrase from the training passage three times after it was modeled by the experimenter. In the current study, the experimenters used sight word pre-teaching to directly teach non-decodable vocabulary words to the participants. These similar techniques allowed the participants to be exposed to words or phrases that may otherwise prevent them from reading fluently.

The second similarity between the two studies involved the use of modeled readings. In the Martens et al. study investigators used a technique termed listening passages preview. This consisted of presenting the participants with a training passage and having them follow along while

the passage was read by the experimenter. The current study used a training phase called “modeling” which was virtually identical to the listening passage preview of the Martens study. By using a modeling step the experimenters were allowing the participants to hear what fluent reading sounds like as they exposed them to the specific training passage.

The final similarity involved repeatedly reading the training passage. In the Martens et al. study the participants and the experimenter alternated reading the training passages two times each. The current study had participants read the same training passage to a set criterion (i.e. read the entire passage with less than two errors) prior to moving to the next training step. The beneficial effects of repeated reading to increase fluency have been well documented in the research literature readings (Meyer & Felton, 1999; Valleley, 2003 & Therrien, 2004).

Although similar to Martens et al. (2007) in both instructional techniques and in the use of a similar urban population, the current study extended their work by examining the effects of fluency training with first-grade high risk African American males. By intervening at an earlier age, there is an even greater possibility of preventing severe reading deficits in later grades. Most of the reading fluency research has been conducted with students in intermediate grades or higher. By the time they reach higher elementary grades, struggling readers are no longer in classes where they are being taught how to read and it is unlikely that they will catch up to their peers (Frances, Shaywitz, Stuebing, Fletcher, & Shaywitz, 1996; Juel, 1988; Stanovich, 1986). This outcome underscores the importance of early and effective intervention for students who are at risk for reading failure. This is particularly important for African American boys due to the achievement gap that exists

between this population and other students. If these students can gain the skills they need to be efficient readers before they reach the middle elementary grades, they may be more likely to close the achievement gap and to be successful in their academic careers.

The current study also supports the work of Abler-Morgan, Ramp, Anderson, & Martin (2007). Their study used a multicomponent intervention to promote the ORF of students with behavior problems. In contrast, however, Alber-Morgan et al. used treatment passages rather than unfamiliar passages during their assessments, thereby not investigating the generalizability of the instruction. The use of repeated readings may increase the ORF of the training passages but does not provide any information about how an individual will perform on new reading material. The current study used unfamiliar reading passages to probe ORF at the end of each training phase. The use of unfamiliar passages provided a more accurate assessment of the participants’ ability to generalize their oral reading fluency to novel reading material. This is particularly important for struggling readers because they not only need to improve their reading fluency on familiar material but they need to be able to transfer these skills to new material as well.

An added strength of the current study is the use of fluency instruction with African American boys. As discussed earlier, this population exhibits the greatest risk for reading failure. Although they have been included as participants in previous fluency research (e.g. Adorin et al., 2007; Morgan et al., 2007; Staubitz et al., 2005; Yurick, Robinson, Cartledge, Lo, & Evans, 2006), African American boys have rarely been the exclusive focus for studies on reading fluency. Considering the severity of the reading risk for this population, this line

of research needs to be extended to examining the most beneficial strategies, materials, and conditions for these students. The current study provides support for the use of fluency training with young African American males but there are still unanswered questions such as the relative advantage of culturally representative stories or the optimum amount or intensity of these interventions (i.e. times per week and amount of time for instruction). The fact that all of the students made progress suggests more gain may have been noted if they received this instruction earlier in the school year and on a daily basis. Future research on fluency instruction with this population should focus on these factors to determine if the impact of fluency rates.

Despite an increase in fluency scores for all of the participants, none of them approached benchmark levels of 40 CWPM that has been established for the end of first grade. Also, some of the participants clearly outperformed others. For example, Andy increased his average of correct words read by 8.3 CWPM but Tim only increased his average corrects words by 4.6 CWPM. There may be several possible explanations for these differences, but it is most likely due to the difference in their reading skills prior to beginning the intervention. Although all of the students were identified as being at risk for reading failure, a closer examination of the DIBELS benchmark scores reveals big differences. These differences can be particularly noted in the phonemic awareness skills exhibited by the participants.

The ability to accurately decode words is important because allows students to place less effort on sounding words out and therefore more effort on reading fluently. The phonemic awareness measure in the current study was the DIBELS nonsense word fluency sub-test. A review of the pre-intervention scores reveals that two

of the four were considered in the deficit range on the NWF winter benchmark. These two participants, Tim and Dan, also scored in the high risk range on the ORF winter benchmark. By the end of this study, the results of spring NWF benchmark revealed that Tim and Dan remained in the deficit range and they also continued to score in the high risk range on the spring DIBELS ORF benchmark. Although both Tim and Dan made some gains in ORF when comparing baseline to treatment probes, they also continued to make errors in word reading during the treatment phase. Curiously, Alex scored in the established range on the fall NWF benchmark but his performance decreased to the emerging range on the spring benchmark. On both ORF benchmarks (i.e. winter and spring) he scored in the high risk range but more importantly there was a similar pattern in ICWP during the treatment phase. There was only a slight decrease in the number of word errors one the intervention was implemented.

In contrast to the results of the other three participants, Andy scored in the emerging range on the winter DIBELS NWF benchmark but improved to the established range on the spring benchmark. These results suggest that his decoding skills had improved during the course of this study and although he still scored in the high risk range on the ORF benchmark, Andy made the most progress in terms increases CWMP and decreases in IWPM on treatment probes. He also became the closest to reducing his risk status on the ORF spring benchmark. These results have implications for this study and for instructional practices. For instance, it is likely that because decoding skills were not directly taught, poor decoding contributed to the only moderate increases in ORF and very little change in word errors made by the participants. Support of this position is provided by other

researchers who found oral reading fluency to be stymied by inadequate decoding skills (Reading & Van Deuren, 2007; Yurick et al., 2006). Implications for practice suggest that students should be explicitly taught phonemic awareness before or along with fluency instruction.

Another major finding in this study involves the comprehension results. Comprehension is often measured in fluency research to determine if it also improves (e.g., Baker et al., 2008; Kourea, Cartledge, & Musti-Roa, 2007; & Spear-Swerling, 2006). These studies indicate that there is a correspondence between increases in ORF and increases in the reader's comprehension. In the current study, minimal increases in comprehension accompanied the ORF growth of 3 of the 4 students. The low ORF these students likely directly affected their ability to understand the reading passages. For example, although Tim increased his ORF by an average of 4 wpm in treatment probes, his baseline levels were so low ($M = 0.33$ wpm) he still was not reading enough words to make sense of the story. By contrast, Andy was reading an average of nearly 10 wpm in baseline and 18 wpm in treatment probes. His comprehension scores increased along with his ORF. Future research should investigate the relationship between the amounts of material read in relation to comprehension scores. Additionally, it may be possible to include a comprehension component during the training procedures to directly address and teach comprehension strategies.

Limitations

A major limitation in this study was the inadequate time available for treatment sessions. As noted, the optimum time and intensity for these interventions, particularly for students evidencing the greatest risk needs to be thoroughly investigated. The amount of time allocated for the current

study was less than ideal. Following the administration of the winter DIBELS benchmark assessments, there were only 10 weeks left in the school year for which the intervention could be implemented. Although the amount of time needed to implement the intervention with each student was between 15 and 20 minutes, the total amount of time allotted by the school for intervention was 30 minutes. This limited the implementation of the intervention to approximately twice per week for each participant. The positive effects for all of the participants, notwithstanding, the results may have been much more robust if the intervention was implemented on a daily basis for each participant and for the entire school year. Future research should replicate this study using a parametric analysis to determine if more intense exposure to the intervention could produce stronger results.

Conclusions and Implications

The results of this study indicated that direct fluency instruction can benefit primary-aged African American boys. Even the lowest performing students made some documented progress, suggesting that year-long intensive instruction along these lines might have achieved or approximated grade-level performance. The procedures were relatively easy to implement and can be included as part of small group activities in any classroom. Although interventions were conducted either individually or small group, it is possible that they can be implemented with up to four or five students in a group. Furthermore, the strategies are simple enough to be implemented by teaching assistants or older peer models, allowing students to receive critical interventions without further taxing valuable teacher time. Strongly indicated is the role of decoding skills in facilitating fluency instruction. Skill in decoding probably

precedes fluency, but at-risk students would benefit from direct ORF instruction beginning in first grade, if not sooner. The importance of targeting primary level students for literacy interventions cannot be

overstated. The current study highlights the potential benefits of these interventions and points to the need for further study with those students showing the greatest risk.

References

- Adorin, S. P., McCall, M., & Klubnik, C. (2007). Promoting generalization of oral reading fluency: providing drill versus practice opportunities. *Journal of Behavioral Education, 16*, 55-70.
- Albner-Morgan, S. R., Ramp, E. M., Anderson, L. L., & Martin, C. M. (2007). Effects of repeated readings, error correction, and performance feedback on fluency and comprehension of middle school students with behavioral problems. *The Journal of Special Education, 41* (1), 17-30.
- Baker, S. K., Beck, C. T., Fien, H., Kame'enui, E. J., Katz, R., Seeley, J. R., Smolkowski, K. (2008). Reading Fluency as a Predictor of Reading Proficiency in Low-Performing, High-Poverty Schools. *The School Psychology Review, 37*, (1), 18-37.
- Begeny, J. C., Daly III, E. J., & Valleley, R., J. (2006). Improving oral reading fluency through response opportunities: A comparison of phrase drill error correction with repeated readings. *Journal of Behavioral Education, 15*, 229-235.
- Francis, D. J., Shawywitz, S. E., Stuebing, K. K., Fletcher, J. M., & Shaywitz, B. A. (1996). Developmental lag vs. deficit model of reading disability: A longitudinal individual growth curves analysis. *Journal of Educational Psychology, 1*, 3-17.
- Fuchs, D., Fuchs, L., Yen, L., McMaster, K., Svenson, E., Yang, N., Young, C., Morgan, P., Gilbert, T., Jasper, J., Jernigan, M., Yoon, E., & King, S. (2001). Developing first grade fluency through peer mediation. *Teaching Exceptional Children, 34* (2), 90-93.
- Fuchs, L. S., Fuchs, D., Hosp, M. K., & Jenkins, J. R. (2001). Oral reading fluency as an indicator of reading competence: A theoretical, empirical, and historical analysis. *Scientific Studies of Reading, 5*(3), 239-256.
- Good, R.H., III, & Kaminski, R.A. (2002). *Dynamic indicators of basic early literacy skills* (6th ed.). Eugene: University of Oregon, Institute for the Development of Educational Achievement.
- Hapstak, J. & Tracey, D. H. (2007). Effects of assisted-repeated reading on students of varying reading ability: A single-subject experimental research study. *Reading Horizon Journal, 47*(4), 315-334.
- Hurry, J. & Sylva, K. (2002). Long-term outcomes of early reading intervention. *Journal of Research in Reading, 30* (3), 227-248.
- Jenkins, J. R., Fuchs, L. S., Van den Broek, P. (2003). Sources of individual differences in reading comprehension and reading fluency. *Journal of Educational Psychology, 95* (4), 719-729.
- Juel, C. (1988). Retention and non-retention of at-risk readers in first grade and their subsequent reading achievement. *Journal of Learning Disabilities, 21*, 571-580.
- Kourea, L. (2007). *The effects of a supplemental reading intervention package on the reading skills of English*

- speakers and English Language Learners in three urban elementary schools: A follow-up investigation*. Unpublished doctoral dissertation, Columbus, OH: The Ohio State University.
- Kourea, L., Cartledge, G. & Musti-Rao, S. (2007). Improving the reading skills of urban elementary students through total class peer tutoring. *Remedial and Special Education, 28*, 95-107.
- Martens, B., Eckert, T., Begeny, J., Lewandowski, L., DiGennaro, F., Monarello, S., Arbolino, L., Reed, D., & Fiese, B. (2002). Effects of a fluency-building program on the reading performance of low-achieving second and third grade students. *Journal of Behavioral Education, 16*, (1) 38-53.
- Meyer, M. S., & Felton, R. H. (1999). Repeated reading to enhance fluency: Old approaches and new directions. *Annals of Dyslexia, 49*, 283-306.
- National Center for Education Statistics (2007). *National assessment of educational progress (NAEP): 2007 Trial Urban District Reading Assessments*. Institute of Education Sciences, U.S. Department of Education. Retrieved June 4, 2008 from <http://nces.ed.gov/nationsreportcard/pdf/dst2007/2008465XW4.pdf>
- National Center for Educational Statistics (2005). *The national assessment of educational progress (NAEP)*. Washington, D.C.: Institute of Education Sciences, U.S. Department of Education. Retrieved June 7, 2004 from <http://nces.ed.gov/nationsreportcard/>
- Nelson, J. S., Alber, S.R., & Gordy, A. (2004). Effects of systematic error correction and repeated readings on the reading accuracy and proficiency of second graders with disabilities. *Education and Treatment of Children, 27*, 186-198.
- Reading, S. & Van Deuren, D. (2007). Phonemic Awareness: When and How Much to Teach? *Reading Research and Instruction, 46*, (3), 267-285.
- Reis, S. M., McCoach, B. D., Coyne, M., Schreiber, F. J., Eckert, R. D., & Gubbins, E., J. (2007). Using planned enrichment strategies with direct instruction to improve reading fluency, comprehension, and attitudes toward reading: An evidence-based study. *Elementary School Journal, 108* (1), 3-23.
- Samuels, S. J. (1979). The method of repeated readings. *The Reading Teacher, 32*, 403-408.
- Schilling, S. G., Carlisle, J. E., & Scott, S. E. (2007). Are fluency measures accurate predictors of reading achievement? *The Elementary School Journal, 107* (5), 429-448.
- Simmons, D. C., Kame'enui, E. J., Harn, B., Coyne, M. D., Stoolmiller, M., Santoro, L. E., Smith, S. B., Beck, C. T., Kaufman, N. K. (2007). Attributes of effective and efficient kindergarten reading instructional time and design specificity. *Journal of Learning Disabilities, 40* (4), 331-347.
- Skiba, R.J., Michael, R.S., Nardo, A.C., & Peterson, R. (2002). The color of discipline: Sources of racial and gender disproportionality in school punishment. *The Urban Review, 34*(4), 317-342.
- Spear-Swerling, L. (2006). Children's reading comprehension and oral reading fluency in easy text. *Reading and Writing, 19* (2), 199-220.
- Stanovich, K. (1986). Matthew effects in reading: Some consequences of individual differences in the acquisition of literacy. *Reading Research Quarterly, 22*, 360-406.
- Staubitz, J. E., Cartledge, G., & Yurick, A. L. (2005). Repeated reading for students with emotional or behavioral disorder:

- Peer- and trainer-mediated instruction.
Behavioral Disorders, 31 (1), 51-64.
- Therrien, W. J. (2004). Fluency and comprehension gains as a result of repeated reading: A meta-analysis. *Remedial and Special Education*, 25 (4), 252-261.
- Valleley, R. J. (2004). An examination of the effects of repeated reading with secondary students. *Journal of Behavioral Education*, 12, 55-76.
- Yurick, A., L., Robinson, P., D., Cartledge, G., Lo., Y., & Evans, T., L. (2006). Using peer-mediated repeated readings as a fluency building activity for urban learners. *Education and Treatment of Children*, 29 (3) 469-506.

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